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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,735	11/20/2000	Boris Kolesnikov	016794/0415	8038

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FOLEY AND LARDNER  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER
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RHEE, JANE J

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 03/27/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application N .

09/700,735

Applicant(s)

KOLESNIKOV ET AL.

Examiner

Jane J Rhee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: .  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 15-19,22-23,26,29-30 rejected under 35 U.S.C. 102(b) as being anticipated by Baudier et al. (3883267).

Baudier et al. discloses a composite material article comprising a fiber composite section having an axial direction (figure 3 number 2), a connecting section for connecting the composite material article to another article (figure 3 from the far right of number 3 to halfway of number 3), and a transitional section located in the axial direction between the fiber composite section and the connecting section (figure 3, far left of number 3 to halfway of number 3), wherein the fiber composite section comprises a plurality of fiber layers each comprising a polymer matrix and fibers embedded in the polymer matrix (col. 2 lines 56-60), wherein the connecting section comprises a plurality of layers including at least some layers comprised of a reinforcement material (figure 3 number 2 and 4) and at least some layers comprised of some of the fiber layers (figure 3 number 2) which extend from the fiber composite section and pass through the transitional section into the connecting section (figure 3 numbers 2 and 3), and wherein the transitional section comprises a structure in which, between the fiber layers which pass through the transitional section (figure 3 number 2) at least some of the layers in

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the connecting section which comprise the reinforcement material extend into the transitional section and terminate at first termination points (figure 3 number 2,3,4) within the transitional section, at least some of the fiber layers in the fiber composite section do not pass through transitional section but rather extend into the transitional section and terminate at second termination points (figure 3, number 2,3,4) within the transitional section, and the layers that extend into the transitional section abut against each other at abutment points located at the first and second termination points (figure 3 number 2 and 4). Baudier et al. discloses that the abutment points are axially offset with respect to each other in the transitional section (figure 3 number 2 and 4). Baudier et al. discloses that the starting from the fiber composite in the transitional section, abutment points are initially formed between the reinforcement material and fiber layers (figure 3 number 2 and 4) which a preselected fiber orientation direction having the least effect on a predetermined strength characteristic of the composite material article, and abutment points for fiber layers having a fiber orientation direction producing increasing effect on the strength characteristic follow offset in the direction of the connecting section. Baudier et al. discloses that the fiber layers of the fiber composite are arranged symmetrically with respect to the center plane of the thickness of the fiber composite (figure 3 number 2). Baudier et al. discloses that the abutment points are in each case arranged symmetrically with respect to the center plane of the thickness of the fiber composite (figure 3 number 2 and 4). Baudier et al. discloses that the fiber layers which pass through the transitional section are formed with a fiber direction which has a 0° direction with respect to the tensile load (col. 5 lines 13). Baudier et al. discloses

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that the fiber layers having an oblique fiber orientation ( $\alpha$ ) each rest directly against a fiber layer having the mirror-image symmetrical orientation ( $-\alpha$ ) with respect to the axial direction, and wherein the fiber layers together have the thickness equal to one layer having a  $0^\circ$  or  $90^\circ$  fiber orientation direction (col. 4 lines 53-63). Baudier et al. discloses that the fibers in a first fiber layer extend in a direction different from fibers in a second fiber layer (col. 4 lines 53-63). Baudier et al. discloses that the fiber composite section, the connecting section and the transitional section have essentially the same cross sectional size and configuration (figure 3). Baudier et al. discloses that the fiber layers which pass through the transitional section are comprised of fiber layers having a fiber orientation direction producing the strongest effect with respect to the main tensile load of the composite (col. 4 lines 40-45).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 20-21,24-25,27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baudier et al. in view of Willard et al. (EP 0783960).

Baudier teaches the composite material described above. Baudier et al. fail to disclose that a proportion of layers in the fiber composite is provided with a  $90^\circ$  fiber orientation direction. Baudier et al. fail to disclose that a proportion of layers in the fiber composite is provided with a fiber orientation direction of  $\pm 45^\circ$ . Baudier et al. fail to

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disclose a connecting section comprises alternating fiber layers, which pass through the transitional section, and the layers comprised of the reinforced material. Baudier et al. fail to disclose that the alternating fiber layers and the layers comprised of the reinforcement material all have the same layer thickness. Baudier et al. fail to disclose that the reinforcement material comprises of metal layers. Baudier et al. fail to disclose that the fiber layers and layers comprised of the reinforcement material having a layer thickness of 0.2 and 1mm.

Willard et al. teaches that proportion of layers in the fiber composite is provided with 90 degrees, and/or +/- 45 degrees orientation (col. 8 lines 38-50), for the purpose of providing the structure with a low density, high strength, high modulus, tailorable structure that has exceptional fatigue resistance and excellent thermal-mechanical endures properties (col. 4 lines 22-25). Willard et al. teaches the fiber layers and layers comprised of the reinforcement material having a layer thickness of between 0.2 and 1mm (col. 3 lines 15-19) for the purpose of producing a light weight structure (col. 4 lines 22-23). Willard et al. teaches disclose a connecting section comprises alternating fiber layers, which pass through the transitional section, and the layers comprised of the reinforced material (col. 8 lines 35-38) which are metal layers (col. 3 line 14) and that the alternating fiber layers and the layers comprised of the reinforcement material all have the same layer thickness (col. 3 lines 15 and 19) for the purpose of providing a symmetrical laminate (col. 3 lines 14).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide Baudier et al. with proportion of

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layers in the fiber composite that is provided with 90 degrees, and/or +/- 45 degrees orientation, in order to provide the structure with a low density, high strength, high modulus, tailorable structure that has exceptional fatigue resistance and excellent thermal-mechanical endures properties (col. 4 lines 22-25) as taught by Willard.

Also, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide Baudier et al. with the fiber layers and layers comprised of the reinforcement material having a layer thickness of between 0.2 and 1mm in order to produce a light weight structure (col. 4 lines 22-23) as taught by Willard.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide Baudier et al. with a connecting section comprises alternating fiber layers, which pass through the transitional section, and the layers comprised of the reinforced material which are metal layers and that the alternating fiber layers and the layers comprised of the reinforcement material all have the same layer thickness in order to provide a symmetrical laminate (col. 3 lines 14) as taught by Willard et al.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jane J Rhee whose telephone number is 703-605-4959. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 703-308-4251. The fax phone numbers for


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the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Jane Rhee  
March 18, 2003



HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
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